

# From Mirage to Kfir part 2

## IAI NESHER





## The IAF Aircraft Series

This publication is intended to bring to all modelers as well as to all Israeli Air-Force enthusiasts, the story of the legendary arm of the IDF.

It is based on the different types of aircraft, on the highest possible professional level, both of the epic as well as of the technical data concerning the aircraft, the squadrons' insignia and specific duty of the aircraft in each squadron.

All the details were gathered by the author in years of dedicated work on the subject; some of this material has been published in the past, but never in such a comprehensive way.

The profiles of the aircraft have been designed and accurately reworked by computer as well as the squadrons' insignia, marks and signs.

All the photographs are from the private collection of the author and from friendly contributors.

There are still many classified details like the squadrons' numbers etc . . . Therefore these are not mentioned together with their signs and names.

I hope this publication will be of interest and help to all it's readers.

## About the author

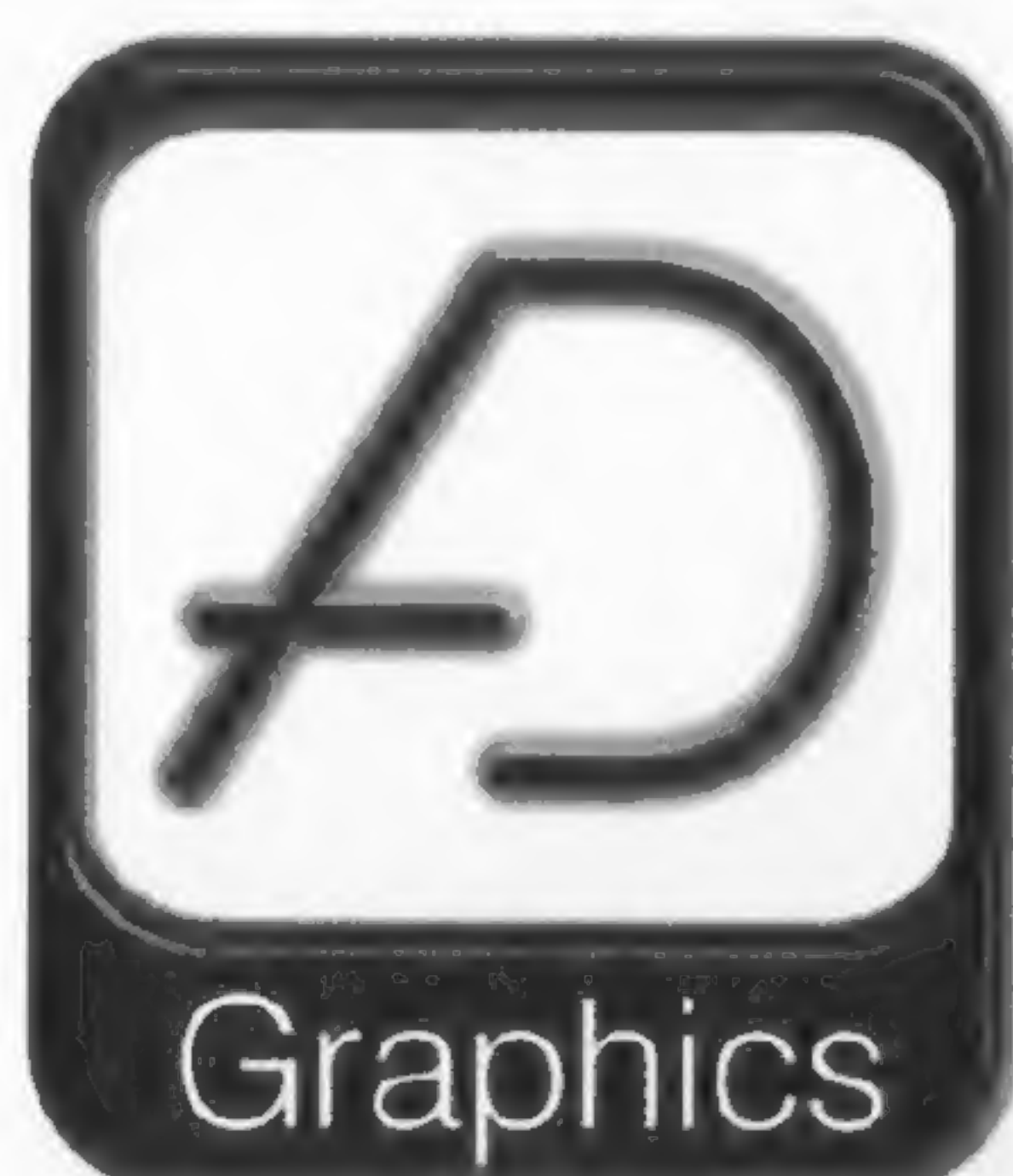
Amos Dor was born in 1958 in Tel-Aviv, Israel. His father served in the IAF between 1950-1954 and later, for many years, as a civilian in the IAF and the Israel Aircraft Industries, in various positions.

No wonder that Amos "breathed" IAF and it's legends - which are real - since his cradle days, and this is about when he started to build plastic models.

Later on he graduated from the IAF technical school and served as a "A-4 Skyhawk" mechanic between 1977-1980 in the "Flying Wing" Squadron. He then continued as a reservist in the same squadron until 1982, when he "converted" to the F-16.

In 1988 he was a founder member of the I.P.M.S. Israel and the editor of the club magazine "Kne-Mida".

Today he lives in Milano, Italy, with his wife and daughter, he owns a Graphic Design Studio and is, of course a member of IPMS Israel & IPMS Italy.



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# IAI NESHER



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### ERRATA

In my previous book, 'THE MIRAGE IIIC SHAHAK' page 3, left column, last two paragraphs - should read:

The fighters were allocated numbers 01 - 85 (not obligingly in sequel!); the two seaters were numbered 86 - 89, and the photo-reconnaissance aircraft 98 and 99 (a third digit was later added in front of the original number). The type was given the Hebrew name *Shahak*, meaning "Skyblazer".

After the Six-Day War, the aircraft were painted in camouflage. In the second half of the seventies, the IAF put some order in the *Mirage* fleet numbering system - the first digit of the single-seaters was changed to 1, the two-seaters were given 2, and the photo-reconnaissance aircraft 4.





# INTRODUCTION

*NESHER* ("Eagle") was the code-name chosen for the first jet-fighter aircraft to be produced in Israel.

The aircraft and the name were uncovered for the first time in 1976, though work on it started in 1968... shrouded in understandable secrecy under the code-name "*RA'AM*" (Thunder).

In fact it was the first step on the way to design and produce the "*KFIR*", an historical turning point in the Israeli defense industry.

In 1966 Israel was the most important client of the French aircraft industry - and not a lesser one, of other French industries like, for example, Renault and Citroen - so, the Israeli Govt. formulated specifications and requested a new type of jet fighter, the *MIRAGE V*.

It had to be based on the frame of the *MIRAGE IIIE*, which was 30cm longer than the *IIIE* and the general envelope was a day fighter with air-to-ground capabilities.

The disappointing radar system was phased-out and instead of the big radome a longer and sharper nose-section was introduced. Some of the avionics systems were also discarded and what remained in use installed in the nose-section, an internal fuel tank was installed behind the cockpit and the belly fuel tank was enlarged; so the total fuel capacity was increased by 500 liters.

The empty weight of *MIRAGE V* was reduced by 450kgs; thus two additional belly-pods could be added.

The Israeli Govt. signed the contract and paid to Marcel Dassault for 50 one-seaters and discussions were on course for an additional couple of two seaters.

The first prototype of *MIRAGE V* was promptly completed and its maiden-flight was on May 19, 1967.

Less than three weeks later, the "*SIX DAYS*" war started and the late French president, General Charles de Gaulle, declared an arms-embargo on Israel. However, Marcel Dassault continued the production of the *MIRAGE V*, as per the original schedule, the first batch to be supplied in September 1967.

President De Gaulle ordered the storage of the aircraft at the Chateaudun AFB, for later decision on their fate.

At the beginning of 1972 the French Govt. decided to buy the aircraft from Israel and to endow its own Air Force with them.

It is officially known that Israel agreed and that it was fully

indemnified. The French Govt. equipped indeed three squadrons with the *MIRAGE V* fighters, except eight a/c which were sold in 1979 to the Chilean AF. The IAF was in a critical need of the *MIRAGE V* jets in order to refill its ranks after the losses it sustained during the "*SIX DAY*" war and the American promised A-4s were not a satisfactory solution. During that period the "*BEDEK MATUSSIM*" ("a/c overhaul works" - IAI today) started a vigorous campaign to convince the defense authorities that it was the proper time to advance its status from an a/c maintenance facility to a real a/c design and manufacturing, research and development industry and to start it with *MIRAGE V*.

IAI LTD was founded. It kept "*BEDEK MATUSSIM*" as a division and advanced other workshops, like radio, electronics, gyro, hydraulics etc... to the status of divisions and plants, marking a parallel history of legendary achievements and workmanship with the IAF.

Marcel Dassault immediately agreed to grant Israel the licence to assemble the *MIRAGE V* and, secretly, even helped IAI to start a production line. Two complete *MIRAGE V*s were covertly disassembled in France and shipped to Israel as spare-parts, under the nose of the French authorities, except for the ATAR engine, produced by the Govt. owned SNECMA.

The ATAR was also manufactured at the Swiss plant at Solzer, under official French licence. In 1968 Israeli "representatives" contacted a Swiss engineer, Mr. Alfred Frauenknecht, who worked at the Solzer plant. With the help of 200.000US\$ they convinced him to hand them over the drawings and plans of the ATAR engine; tens of thousands of drawings safely arrived in Israel in twenty cases. The last four cases fell into the hands of the Swiss police and Mr. Frauenknecht was prosecuted and condemned to 4.5 years in prison.

In 1969 IAI started the production and assembly lines of the *MIRAGE V - NESHER*.

The IAI product - assurance level and the IAF fighter pilots fully demonstrated the value of the *NESHER* during the 1973 "*YOM KIPPUR*" war, so it was only natural to decide to continue the R&D program till the *KFIR*s will reach the Middle-East skies.

The full story will be available in the third part of the trilogy "from *MIRAGE* to *KFIR*" in this series.



Nesher overhaul line in the IAI.



## IAI NESHER IN SERVICE WITH THE I.A.F.

The first *NESHER* was completed at the beginning of 1971 and in May '71 was integrated into the "*FIRST FIGHTING*" squadron.

51 single-seat fighters were produced by *IAI* and the last one was handed-over to the *IAF* in February '74.

During the same year ten additional two-seaters improved the order of battle of *IAF*. The fighters were allocated two digits numbers (not obligingly in sequel!); a third digit was later added in front of the original number: to the single-seaters 5 and to the two-seaters 6.

Until 1982 *IAF* did not make public anything about *NESHER*s operations. Also, in the first days of the 1973

"*YOM KIPPUR*" war the *IAF* was under pressure and real worry due to the surprise element. (It is almost impossible to describe the panic in the public and the heavy sense of responsibility of every soldier and officer in the *IDF* when, on the holiest Jewish day, with overcrowded Synagogues, both Syria and Egypt invaded the country). So, the *NESHER* pilots did what they had to do; took-off to battle, landed to refuel and reload and back again to fight, with no time for reports or for notes in the log-books.

I had to do real hard work to dig for the few details I offer now to you. I hope to be able in the future to obtain more details and, ofcourse, to share them with my readers.



IAI Nesher N° 10 was the first a/c manually built before the production line started, during landing after one of it's test-flights.



IAI Nesher N° 501 reside at the IAF Museum.





# THE FIRST FIGHTER SQUADRON

The first *NESHER* (N° 12) was flown from *IAI* to the squadron fields at *HATZOR AFB* by Danny Shapira, then the chief test-pilot of *IAI*, in May 1971.

The *NESHER*s were operated in the squadron alongside the *MIRAGE IIICJ*s, and in many combats their "*SHAFRIR 2*" missiles - as well as their cannons - were decisive on who was the winner.

The total enemy a/c shot down by this squadron during the "*YOM KIPPUR*" war was 56: 41 *MiG 21*s, 10 *MiG 17*s, 3 *Hunters*, 1 *Delphin*, 1 *Mi-8* and the "*KELT*" missile (see, please the *MIRAGE IIICJ* book pp 18, Oct. 6 1973).

The squadron operated the *NESHER*s till 1975 and in April 1975 was endowed with the first *KFIR*s.

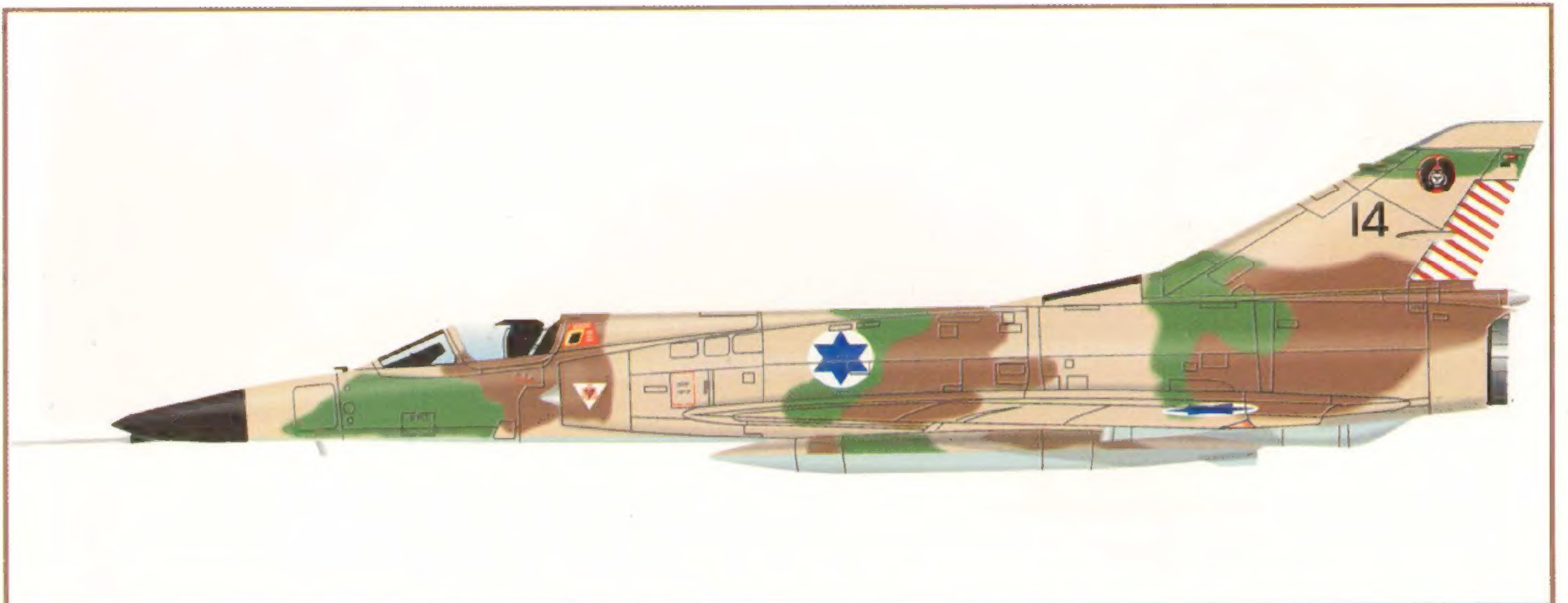


▲ Nesher N° 76 from 101 Sqd. during take-off.

▼ Nesher N° 34 from 101 Sqd. inside its protective shelter.



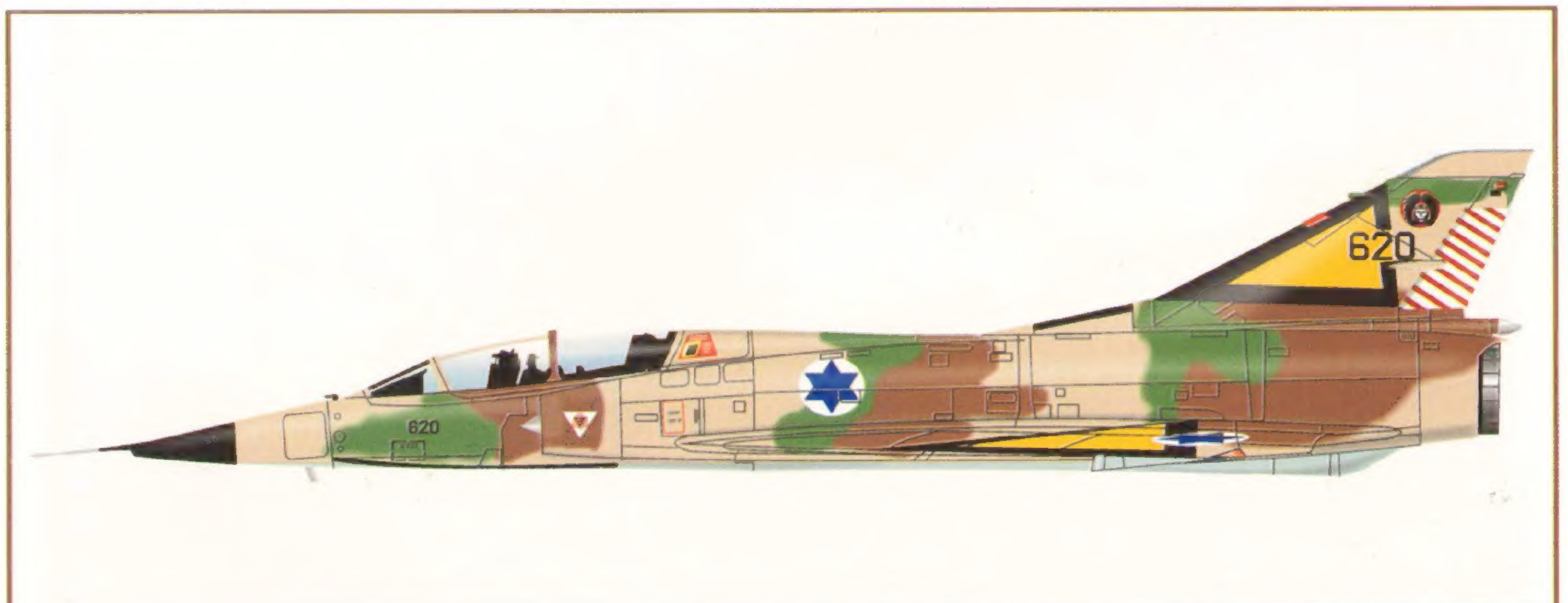




Nesher N° 14 from the First Fighter squadron.



▲ Nesher N° 12 & 14 from the 101 squadron waiting for their take-off permission for a training mission.



Two-seatter Nesher N° 620 from the First Fighter squadron.

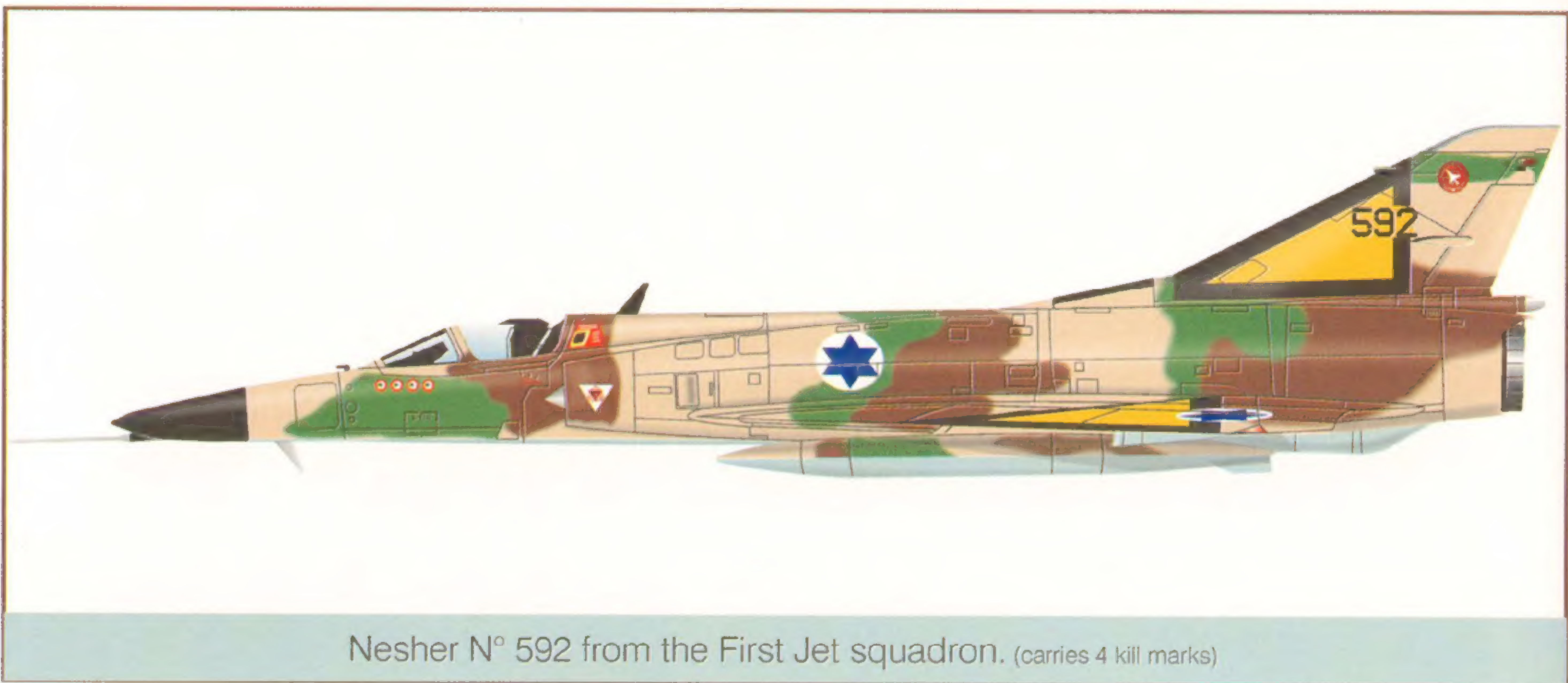






# THE FIRST JET SQUADRON

It officially received the first *NESHERs* on Oct. 13, 1971 and like 101 squadron operated them alongside the *MIRAGE IIICJs*.



Nesher N° 592 from the First Jet squadron during its take-off (mid. 70s').







# THE GUARDS of the ARAVA SQUADRON

Commissioned on January 10, 1972 to be the third *NESHER* squadron at the newly built *ETZIYON AFB* in the "Moon valley" north-west of Eilat city.

The squadron started operations in Sept. 1972 with *Lt. Col. Uri Even-Nir* as squadron CO.

The "*YOM KIPPUR*" war (Oct. 1973) found the squadron with an order of battle of 19 *NESHERs* under the command of *Lt. Col. Menachem Sharon*.

During the war they had about 700 sorties which included engagements with enemy a/c.

In these dog-fights and pursuits, 42 enemy a/c were downed, and by tragic error, also a "*Knights of the Orange tail*" *F-4E PHANTOM*, piloted by *Even-Nir*, the first squadron CO. (*Lt. Col. Even-Nir* and his navigator ejected and parachuted safely to the ground).

The squadron sustained no losses, neither in a/c nor in personnel!!!

On December 1st, 1978 the squadron up-graded from *NESHER* to *KFIR C-2*.

The *NESHERs* were sent to *IAI* for preparations before selling them to Argentina.

On January 10, 1982 the squadron was transferred to the newly built "*OVDA*" AFB. the reason was that the *ETZIYON AFB* was on Sinai territory, returned to Egypt following the peace treaty.

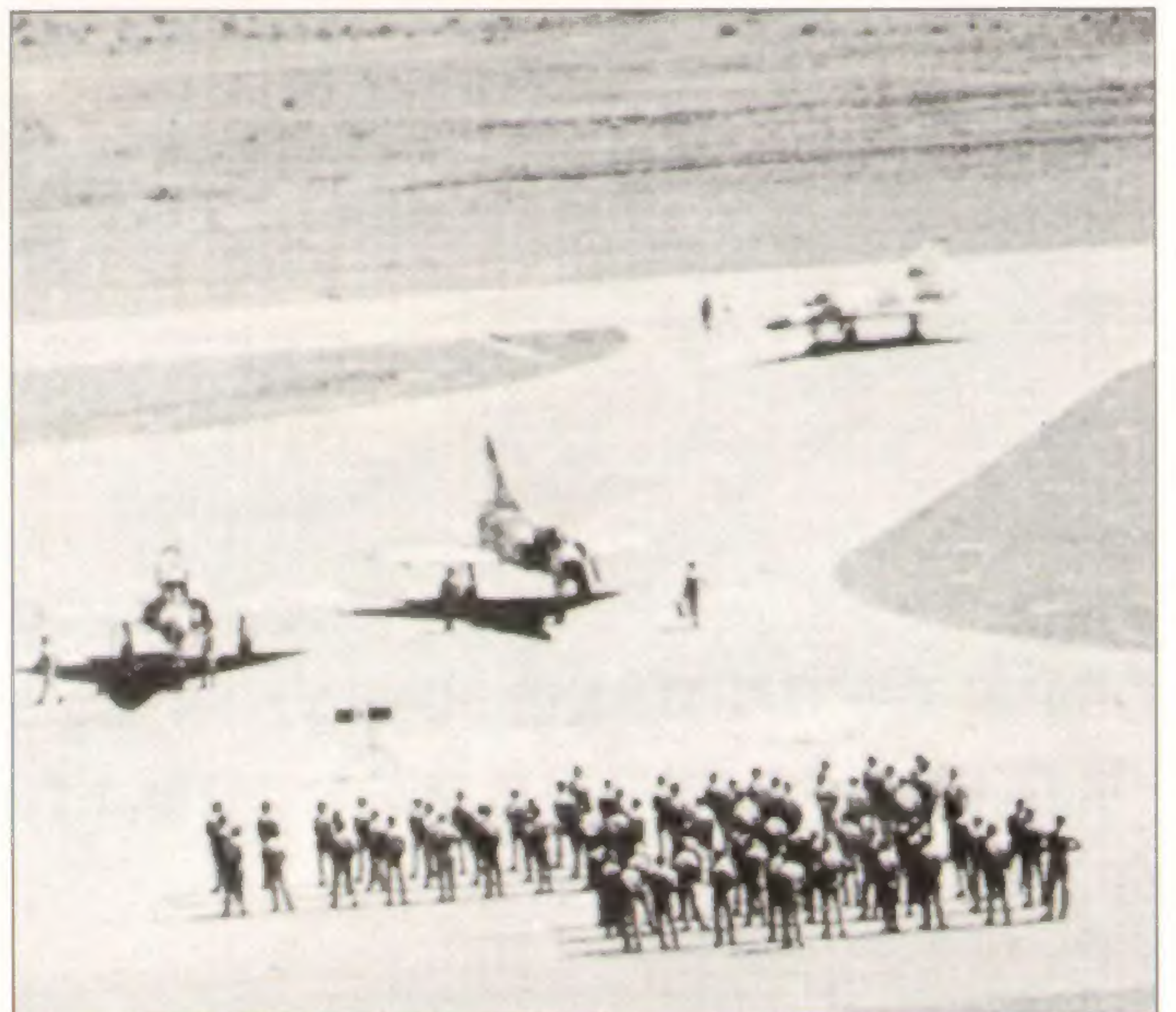
In May 1983 the squadron started to receive the advanced *KFIR C-7* and was the only squadron to fly this type. *OVDA AFB* was closed down as an active field and on July 19, 1988. The squadron was again transferred, this time to the *HATZOR AFB*.

On July 20, 1994 the *KFIRs* were sent back to *OVDA AFB* for storage and on August 1st. 1994 the squadron started the adoption of the *F-16A (Netz)*, received from the surpluses of the *USAF* - and *Lt. Col. Elisha Hosman* was nominated squadron CO.

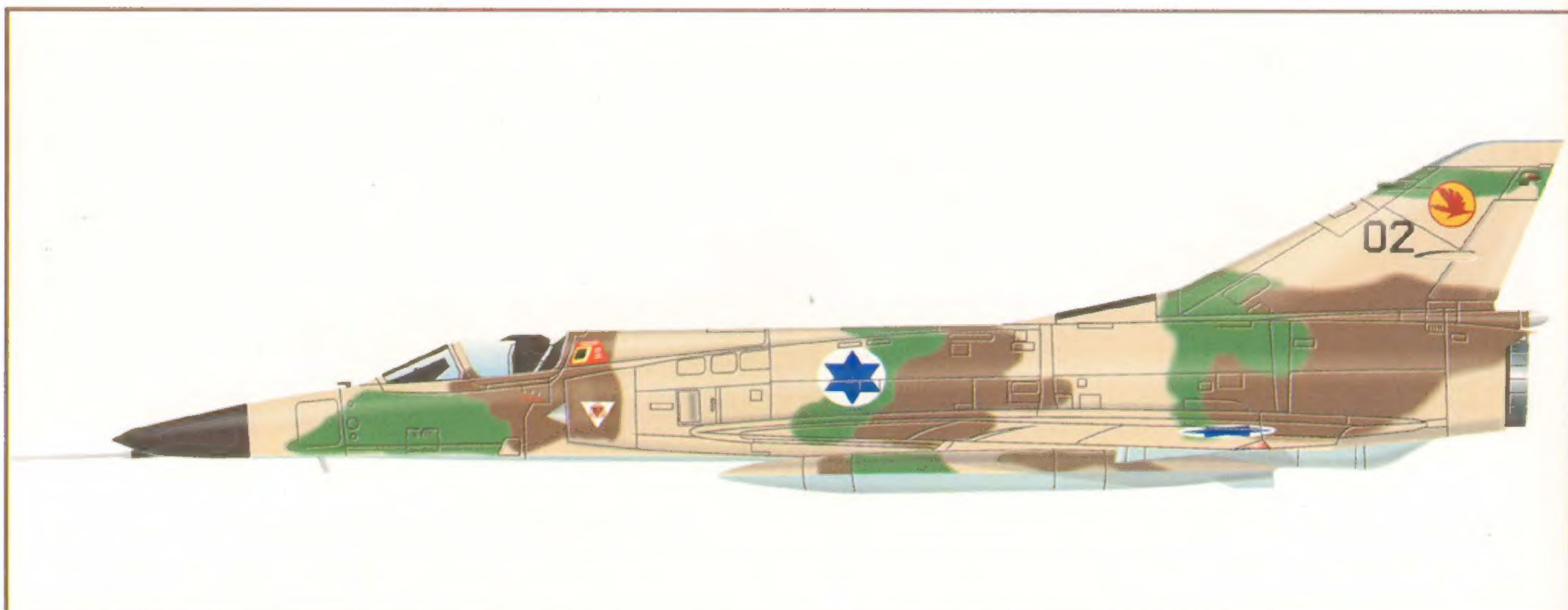
The squadron name was changed then to "*PHOENIX*".



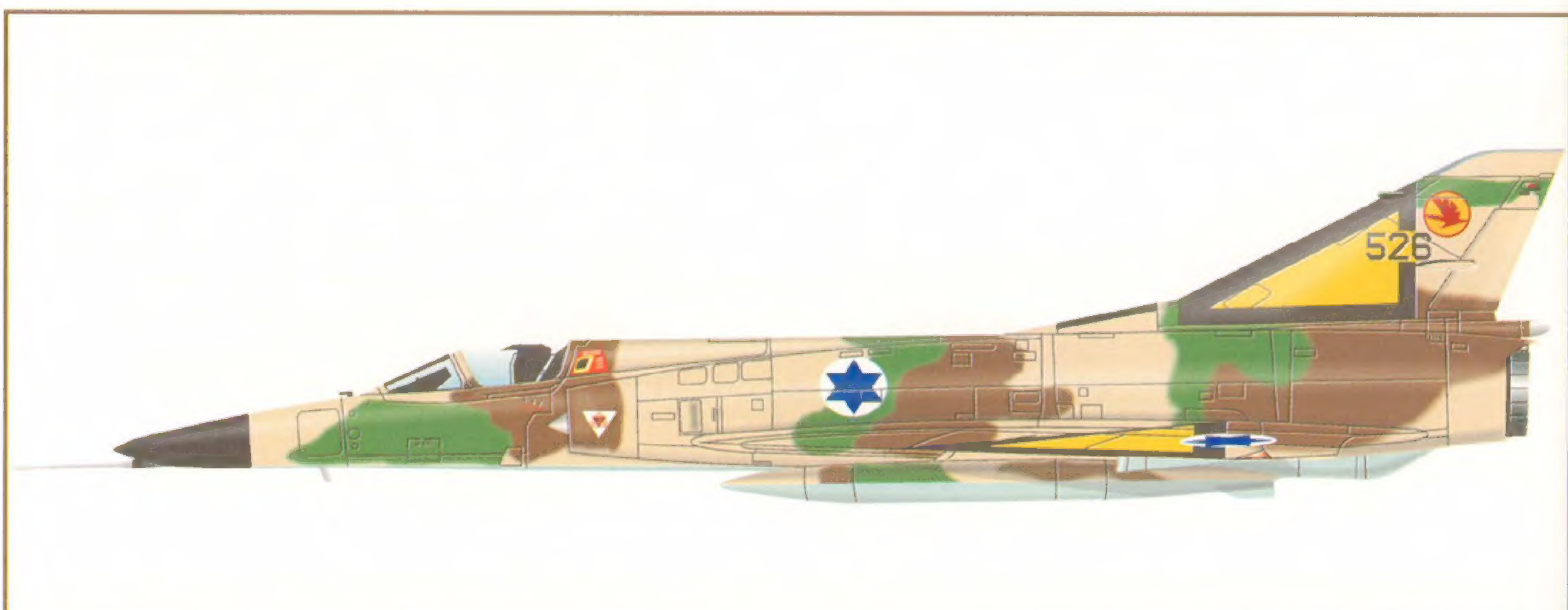
▼ The Guards of the Arava opening ceremony at Etzion AFB.







Nesher N° 02 from the Guards of the Arava squadron - end of 1972.



Nesher N° 526 from the Guards of the Arava squadron - 1974.



▲ Nesher N° 526 from the Guards of the Arava squadron carries 2 kill marks.





# THE HORNET SQUADRON

Commissioned on October 4, 1955 with *Benny Peled* as CO., it was the first squadron to fly the *MD450B OURAGAN* jet fighters. This lasted until December 1972 when the squadron integrated the *NESHER*, thus becoming the fourth *NESHER* squadron.

The new CO. was *Lt. Col. Ya'akov Gal*. In mid 1976 the squadron converted to *KFIR* and operated them until 1987 when the *KFIR* was out-phased.

The squadron was inactive for about two years, then, in August 1989 it became the first squadron in the *IAF* to fly the new *AH-64A APACHE* helicopter.



▼ Nesher N° 634 from the Hornet squadron taxiing to its take-off point.







Nesher N° 09 from the Hornet squadron - end of 1972.



Nesher N° 523 from the Hornet squadron - 1974.

▼ Nesher N° 523 from the Hornet squadron just after landing.







# THE NEGEV SQUADRON

Began operations at the end of November 1976 with *Nesher* aircraft at *Eitam AFB*, with *Maj. Uri Even-Nir* as the first squadron commander. The *Neshers* were operated until 1979, when they were phased out of *IAF* service and sold to Argentina. The squadron then started to "collect" all the remaining *Shahaks*, with the exception of the photo-reconnaissance aircraft Nos. 98 and 99, which continued to serve in 101 squadron. The last *Shahaks* were finally phased out of service in June 1982, and were also sold to Argentina. The squadron was then temporarily shut down.

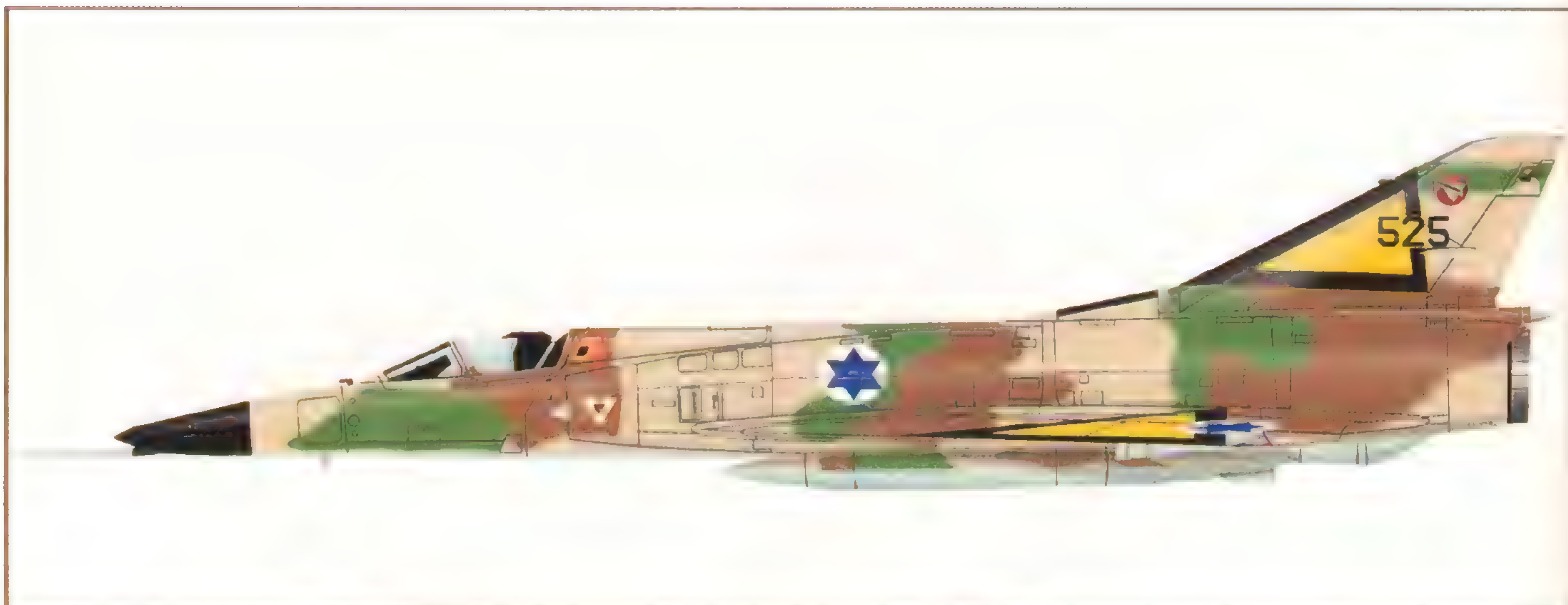
When Israel returned the *Sinai Peninsula* to Egypt, as convened in the peace agreement between the two countries, a new base was built near *Mitzpe Ramon* in the *Negev*, known as *Ramon AFB*. The Negev squadron started there its new career with *F-16A/B Netz*.



▼ A neatly parked row of Neshers from the Negev squadron.







Nesher N° 526 from the Negev squadron - end of 70s.



▲ Two-seater Nesher N° 622 from the Negev squadron waiting its pilots



▲ Nesher N° 582 from the Negev squadron ready for flight..





## NOTABLE DATES AND EVENTS

### May 1971

The first *NESHER* (N° 12) was received by *IAF* for testing by the 101 squadron.

### August 1971

*Lt. Col. Avi Lanir* is nominated CO. of the 101 squadron.

### Oct. 18, 1971

Official *IAF* reception of the *NESHER* within its order of battle, both by the 101 and the First Jet squadrons.

### Jan. 10, 1972

The establishment of the Guards of the Arava squadron in the *HATZOR AFB* as the third *NESHER* squadron.

### Sept. 1972

The Guards of the Arava squadron inaugurates the newly built *ETZIYON AFB*.

### Dec. 1972

Conversion of the Hornet squadron in *HATZOR AFB* into the fourth *NESHER* squadron

### Jan. 8, 1973

First two *NESHER* kills: *Yoram Geva* and *Eliezer Ya'ari*, both from 101 squadron, each one credited with one Syrian *MiG 21*.

### The "Yom Kippur" war.

### Oct. 6, 1973

A formation of four *NESHERs* was stationed in stand-by mission at the *OFIR AFB* near Sharm-A-Sheik. They were all from the Guards of the Arava squadron, and were piloted by *Col. Yallo Shavit*, *Lt. Col. Assaf Ben-Noon*, *Maj. Menachem Shmul* and *Keydar*. They took-off to meet eight Egyptian fighters. *Ben-Noon* marked the first kill of the war with the help of a *Shafrir 2* missile. The second *MiG-21* was credited to *Menachem Shmul*. *Keydar* downed a *Su-7* and *Yallo* used a *Shafrir 2* to get rid off another *Su-7*.

That was for breakfast. In the afternoon, in two separated sorties, *Lt. Col. Menachem Sharon* destroys one *MiG-21* and one *MiG-17*. *K.*, a young pilot from the Guards of the Arava squadron marks down two *MiG-17* and *Assaf Ben- Noon* kills an additional *MiG-21*.

### Oct. 14, 1973

*Even-Nir* marks down a historical "first", a Libyan *MIRAGE V!!!*

The same day, some more *MiGs* are downed by the Guards of the Arava fighters.

### Oct. 15, 1973

A formation of four *NESHERs* from the Hornet squadron destroys a formation of four Egyptian *MiGs* in a very short encounter; the Guards of the Arava squadron is credited with six Egyptian a/c and, unfortunately knocks down the *IAF* own *F-4E Phantom*, as mentioned before in this book (page 7).

I also wish to add the following information:

1) The two-seater *NESHERs* shuttled between the *NESHER* squadrons whenever they were needed as OC (operational conversion), so, their markings were repainted according to the squadron they belonged to at this or that point in time.

2) *Col. Giyora Epstein(ret)* the world "Ace" with 17 air-combat jet fighters credits, downed during two days of the "YOM KIPPUR" war with *NESHER N° 61* from 101 squadron eight Egyptian a/c as follow:

Oct. 19, 1973 - two *Su-7* and two *Su-20*.

Oct. 20, 1973 - four *MiG-21s*.

In Oct. 24th he downed three more *MiG-21s*.

3) *NESHER N° 61* (later 561) became to be the "Ace" of all *NESHERs* in the *IAF* with total of 12 kills- all Egyptian a/c.



Series of frames showing the shot down of the first *MiG-21* by *NESHER* in the "Yom Kippur" war.





▲ Nesher N° 501 during an a/c show.

▼ Lt. Col. Danny Shapira with several ground crew people just after landing back from a combat mission during the "YOM KIPPUR" war.





## RA'AM A & RA'AM B

Towards the end of 1969 the *IAI* completed blueprints for a prototype a/c called *RA'AM A* (Ra'am=Thunder).

The master-plan was the implant of the *J-79 F-4 PHANTOM* engine into the *NESHER* airframe.

*NESHER* tail N° 88 was chosen to start the work on. According to schedule the test-flight was due in January 1973 and beginning of supply to the *IAF* in November same year.

In February 1970 the *IAF* presented a more detailed envelope called *RA'AM B*. In mid. 1971 the study of *RA'AM B* revealed that the *IAF* requirement of introducing new systems will increase weight and price and decrease manoevrability. So, the project was shelved. *NESHER* 88

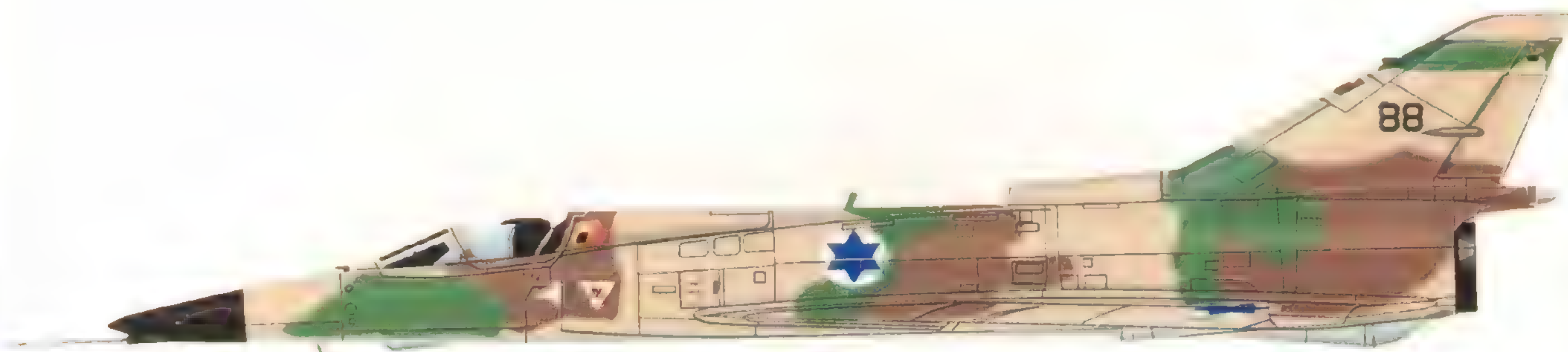
was returned during the *YOM KIPPUR* war to the Guards of the Arava squadron - together with the *IAI* test-pilot Assaf Ben-Noon - and they performed brilliantly during the war.

*NESHER* 88 continued to fly with the squadron till mid. 1975 when, during a training flight, it crashed into the Mediteranian.

As far as I know, the pilot bailed-out and was saved.

Before being returend to the *IAF* the *NESHER* 88 was stripped-off of the experimental elements belonging to *RA'AM*; these elements were reimplanted onto the *MIRAGE* IIIB N° 88.

Work continued under the code-name "*TECHNOLOG*" which resulted in the birth of "*KFIR*".



IAI RA'AM



The last version of the Technolog now reside at the IAF Museum.



# IAI NESHER



## TECHNICAL DATA

TYPE: Day fighter and attack.  
 ENGINE: One Snecma Atar 9C turbojet rated at 9,370lb dry and 14,110lb with max. afterburner.  
 DIMENSIONS: Wing span - 8,22m.;  
 length - 15,56m.; height - 4,50m.; wing area - 34,80m².  
 WEIGHTS: Empty - 6,600kg.; max. loaded - 13,500kg.  
 ARMAMENT: Two 30mm DEFA 5-52A guns  
 with 125 rounds each plus 2 AIM-9 Sidewinder or Shafir 2,  
 or bombs or other stores of up to 4000kg. total.  
 PERFORMANCE: Max. speed - 1,390km/h clean at sea level, Mach 2.2 at max. altitude..  
 climbing rate - 11,160m/min.;  
 max. altitude - 18,000m.;  
 range - 1,250km. in attack mission with two 400kg. bombs and external fuel tanks.







◄ Not the best shots but...  
▼



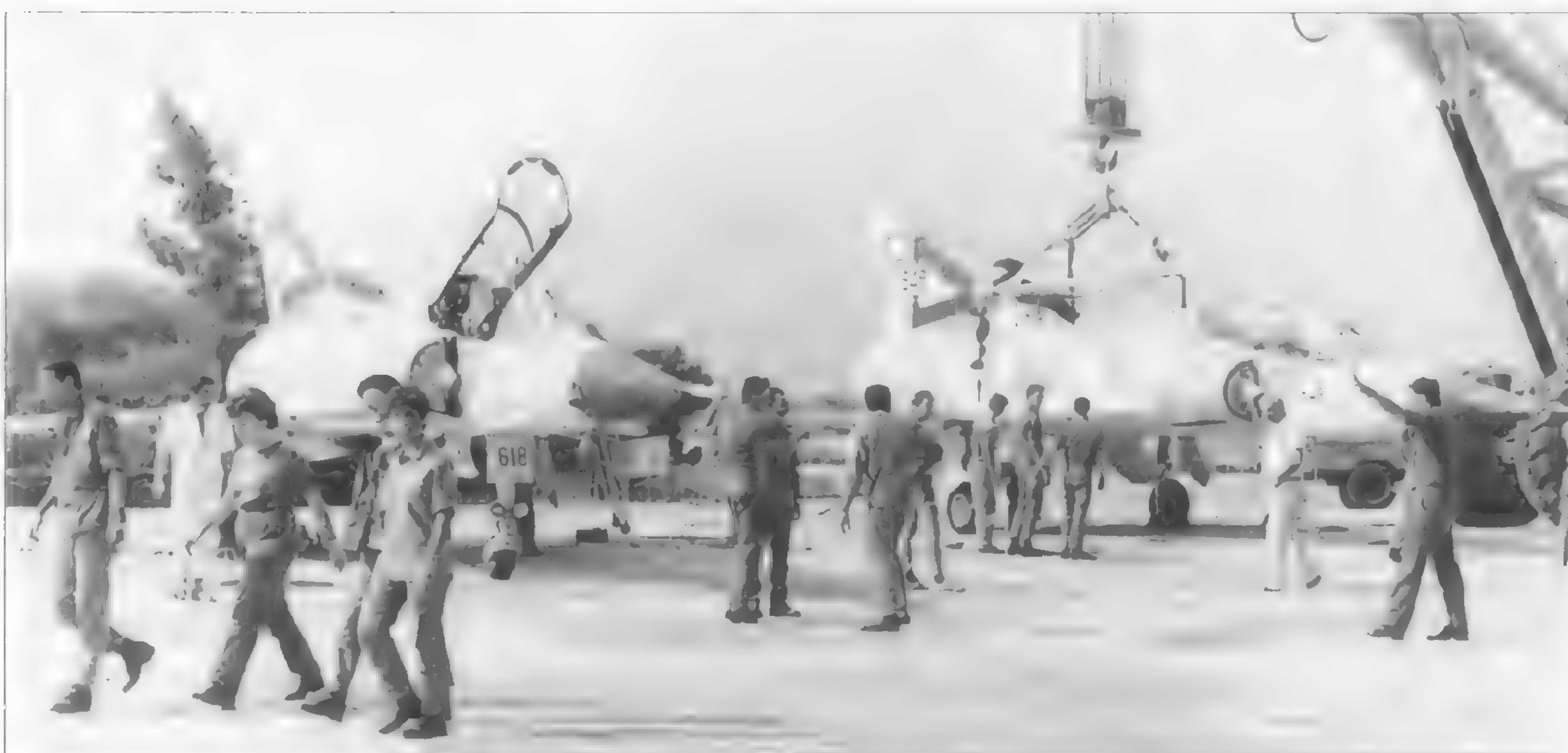
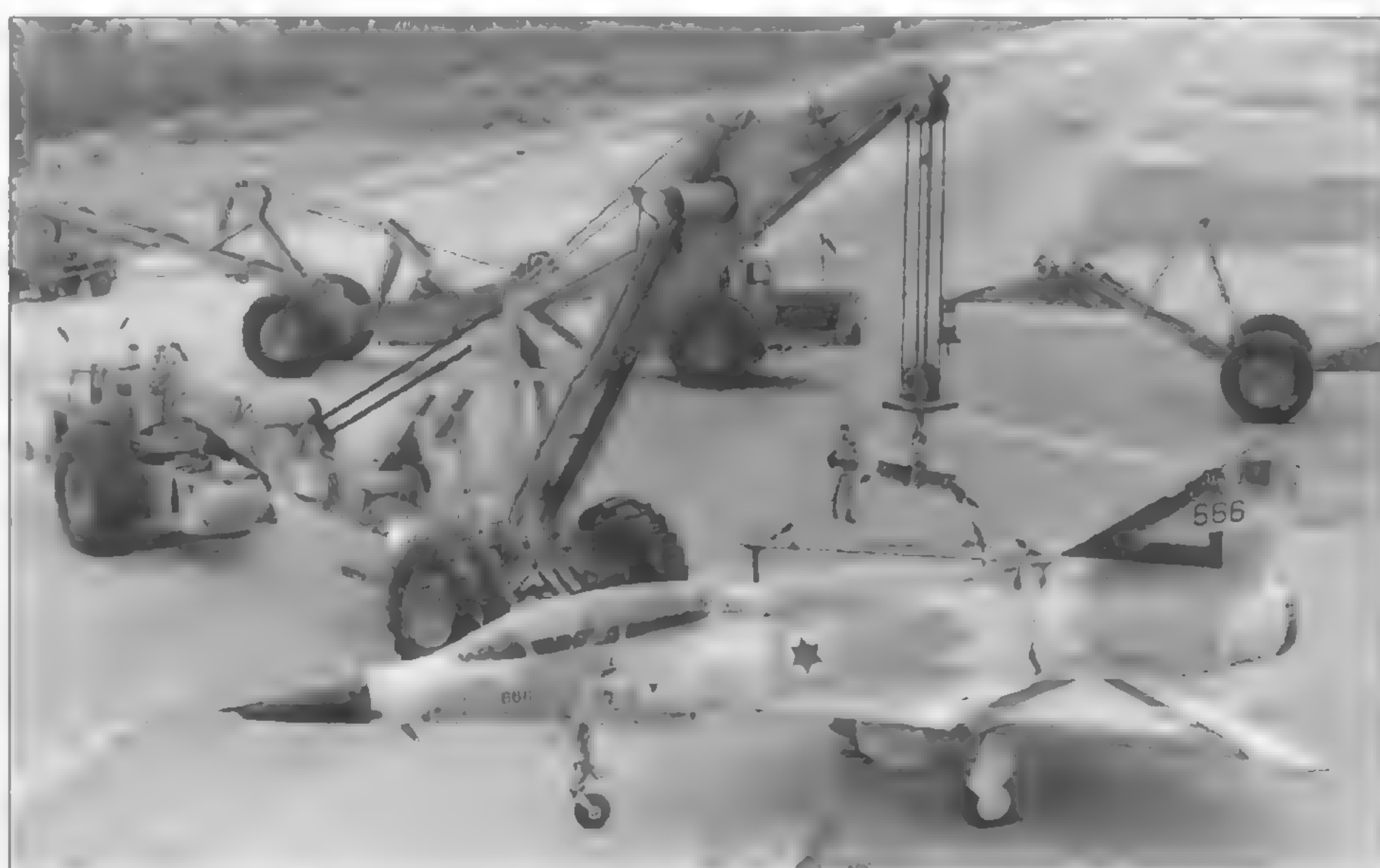
▼ Nose and canopy close-up.







Three photos showing Neshet ground crew placing an a/c using crane, named in IAF "Gamal"(Camel in hebrew) to move it into its place for an a/c exhibition.







▲ Nesher N° 666 shown here during an exhibition with some of its accessories.



◀ Nesher N° 611 transported with trailer to the IAI for overhaul.





Fascinating shot of Nesher N° 666 from the Hornet squadron (notice the unusual rudder color).





Nesher N° 611  
from the Negev squadron  
after landing from its  
training mission.



Nesher N° 666  
from the Hornet  
squadron  
taxiing for  
take-off.



▼ Nesher N° 620 from the 101 squadron during take-off.







▲ Nesher N° 625 from the Guards of the Arava squadron taxiing into its protective shelter..



▼ Nesher N° 611 prepared for flight by its ground crew man







▲ Nesher N° 666 & 620 are displaying in one of the IAF bases during an a/c show.



▲ Nesher N° 620 display in one of the IAF bases during an a/c show.

▼ Nesher N° 666 display in one of the IAF bases during an a/c show.







▲ Nesher flies over the Mediterranean shore.

▼ Neaher N 582 taxiing to its take-off point (notice that the squadron insignia is missing!!!).







▲ Nesher N 526 from the Guards of the Arava squadron in flight over the Mediterranean shore.



▲ Nesher N 565 from the Hornet squadron at landing.



Nesher N 501 from the Hornet squadron (carries one kill mark) checked by its ground crewman.





A beautiful front shot of Nesher N° 16 from the Hornet squadron.

Nesher N 20 after take-off







◀ Nesher N° 85 from the  
Hornet squadron  
after its take-off.



Nesher N° 16 from the ▶  
Hornet squadron ▼  
waiting for its pilot,  
and after take-off.







▲ Nesher N° 14 from the Hornet squadron after its take-off.



Nesher N° 21 from the Hornet squadron after its take-off. ►

Row of mixed one and two seaters Nesher waiting for their pilots. ▼







An unusual upside view photo of Nesher in flight. ▲



◀ Nesher N° 09 from the Hornet squadron carries Shafrir 2 missiles and subsonic fuel tanks..



► Nesher N° 02 from the Guards of the Arava squadron carried to its shelter after landing from its training mission.





A neatly parked row of Neshers at IAI, painted and ready for Argentina.



▼ A neatly parked row of Neshers at IAI covered with "COCOON" ready for shipping.





# Camouflage

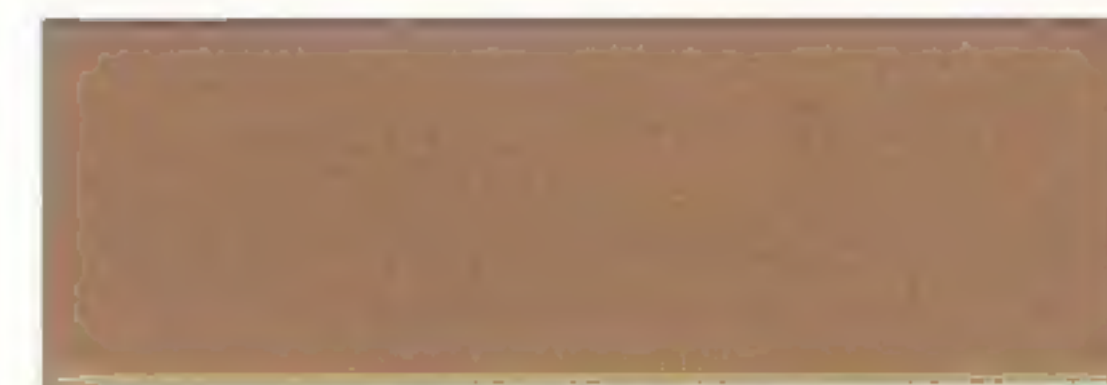
The basic scheme for Israeli Neshers was applied according to a single pattern, and were remarkably uniform when the a/c was painting in the IAF. However, over time, the colors have remained the same and the patterns look alike at quick glance, no two a/c patterns were the same. Check your references carefully for the a/c you are modeling!!!



FS - 33531



FS - 34227



FS - 30219



FS - 35622

## Decals & Conversion kits

Decals in 1/48 scale

AeroMaster - Ref. 48-437.

Conversion kits.

For ESCI kits N° 4030/4073/4032 Eagle Designs  
code 48-ck-13

For the Heller Mirage IIIC code 48-ck-13h

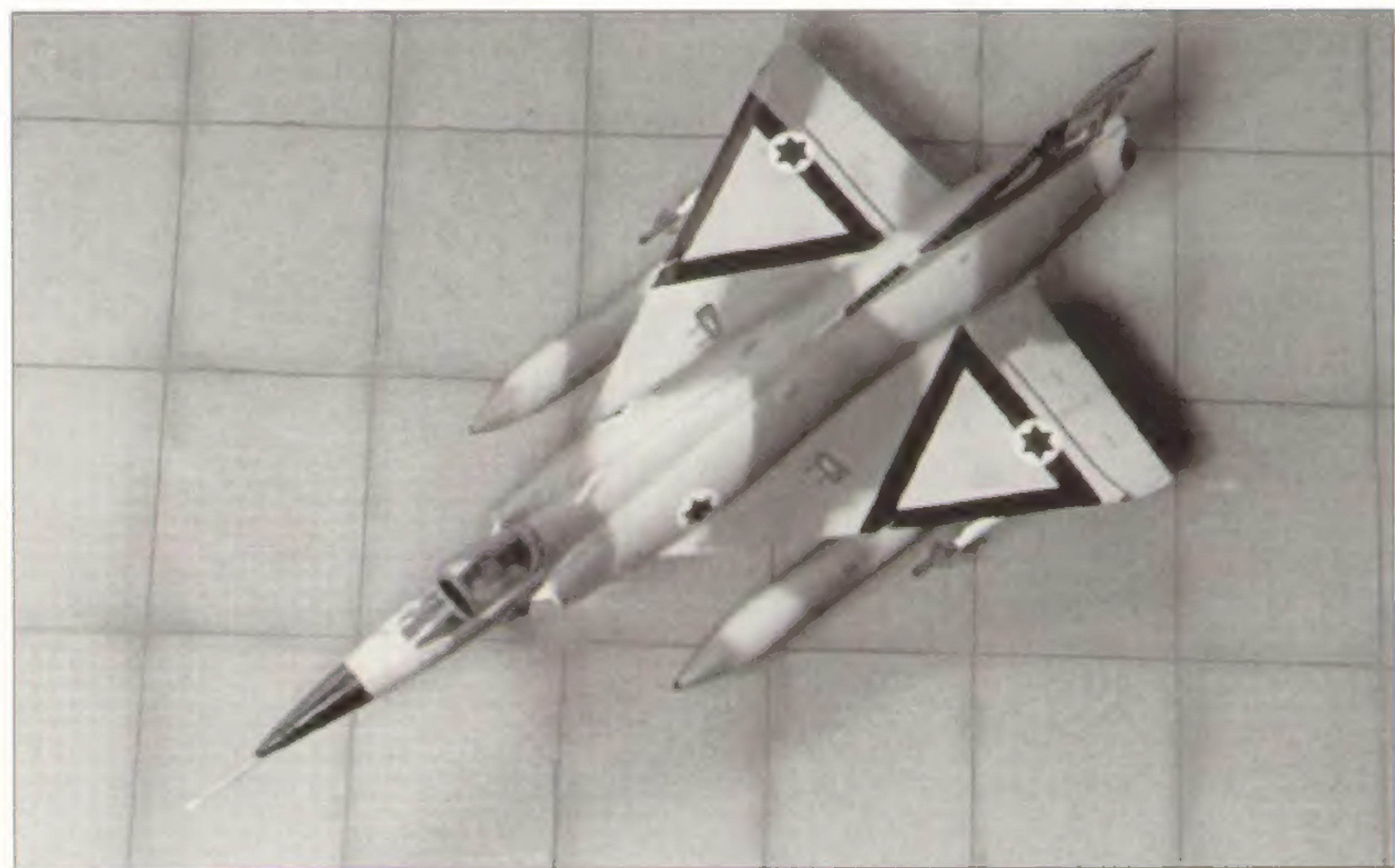
## Recommended Kits

1/72 scale - Heller

1/48 scale - Esci



Two views of NESHER kit built by one of the IPMS Israel members.



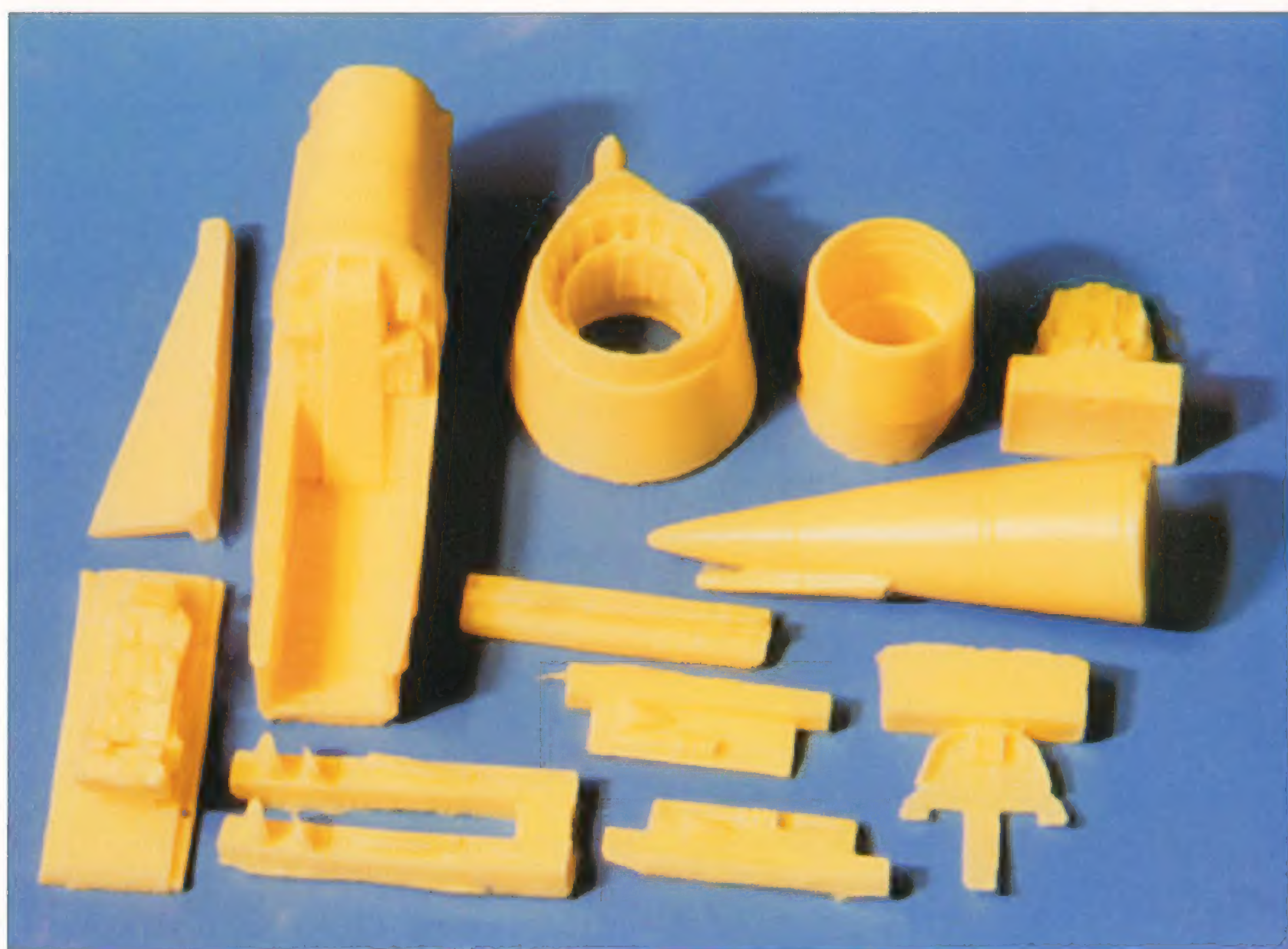
Please visit our Internet site at: <http://iaf.interfree.it> for available kits, decals and more...







Typical Nesher armament.

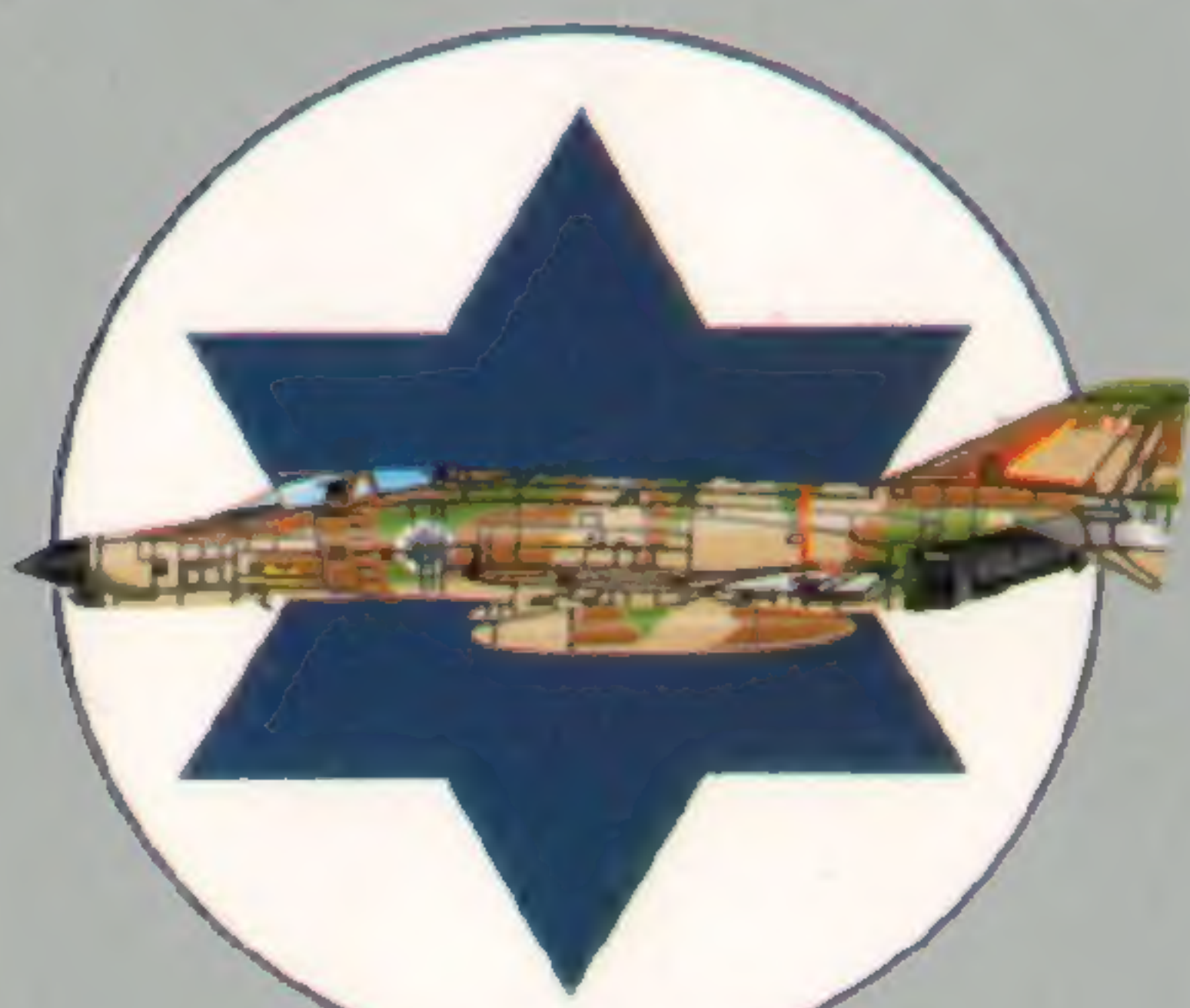


The EAGLE DESIGNS - NESHER conversion resin kit 1/48 code 48-CK-13.



# The IAF Aircraft Series

*The*  
**F-4E PHANTOM II**



**KURNASS**

The IAF Aircraft Series by A. Dor No. 1



*The*  
**A-4 Skyhawk**



**AYIT**

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